

REMARKS

The final Official Action rejected Claims 1, 3-12, 14-20, 22-29, 31-46, 48-54 and 56-61 under 35 U.S.C. § 103(a) as being unpatentable over an article entitled "Graphics Recognition for a Large-Scale Airplane Information System" (referenced by the Official Action as *Baum et al.*) in view of an article entitled "Interpretation of Technical Illustrations for Airplane Maintenance and Operations Applications" (referenced by the Official Action as *Boose et al.*) and further in view of newly cited, U.S. Patent No. 7,065,476 to Paul F. Dessureault, et al. As described below, independent Claims 1, 20 and 38 have been amended to further patentably distinguish the claimed invention from the cited references, taken either individually or in combination, by incorporating the recitations previously set forth by dependent claims 56, 58 and 60, respectively. As a result of the amendments to the independent claims, dependent Claims 56, 58 and 60 have been canceled and dependent Claims 57, 59 and 61 have been amended to update their dependency accordingly. Since the amendments to the independent claims merely add recitations that were previously set forth by dependent claims, no new issues are raised by these amendments such that the amended set of claims should be substantively considered at this stage of examination. Based on the foregoing amendments and the following remarks, reconsideration of the present application and allowance of the amended set of claims are respectfully requested.

As now amended, independent Claim 1 describes a method for automatically generating a subset of components from a plurality of components. The method of independent Claim 1 receives a request to generate a subset of components, accesses connectivity data including information regarding the plurality of components and the connections among the plurality of components, automatically selects portions of the connectivity data that satisfy the request to generate the subset of components, generates a diagram based upon the automatically selected portions of the connectivity data of only the subset of components without other components from the plurality of components that are not included in the subset of components, and displays a diagram of only the subset of components without other components from the plurality of components that are not included in the subset of components. As now amended, the automatic

selection of portions of the connectivity data is further defined as follows: (i) for an initial component in the subset of components, identifying another component connected to the initial component based upon the connectivity data, (ii) adding the other component to the subset of components; and (iii) repeating the identifying and adding steps with the other component being the initial component.

In conjunction with the prior rejection of Claim 56, the Official Action noted that *Baum, et al.* did not disclose the further definition of the automatic selection of portions of the connectivity data in the manner now set forth by amended independent Claim 1. See page 25 of the Official Action. However, the Official Action contended that the Dessureault '476 patent this further definition of the automatic selection of portions of the connectivity data in the manner now set forth by amended independent Claim 1. However, as described below, the Dessureault '476 patent also fails to teach or suggest the further definition of the automatic selection of portions of the connectivity data in the manner now set forth by amended independent Claim 1.

Initially, it is noted that the amendments to independent Claim 1 further define the step of automatically selecting portions of the connectivity data that satisfy the request to generate the subset of components. In this regard, the automatic selection of portions of the connectivity data includes identifying another component connected to the initial component based upon the connectivity data, adding the other component to the subset of components and repeating the identifying and adding steps with the other component now being treated as the initial component. Once portions of the connectivity data that satisfy the request to generate a subset of components have been automatically selected, a diagram is generated based upon the automatically selected portions of the connectivity data. In contrast, the Dessureault '476 patent describes a technique for representing components during the period during which a building is being designed and thereafter throughout the life of the building. According to the Dessureault '476 patent, a component can be represented by an object having a number of characteristics that can be further defined and changed as the component itself is further specified during the design process. In order to represent the intended design, the objects representing the various

components, such as ducting, piping, wiring or the like, may be graphically interconnected to form various subsystems. Thus, the drawings and the resulting data structure described by the Dessureault '476 patent includes representations of components that are connected in some fashion.

However, the Dessureault '476 patent does not teach or suggest that in response to a request to generate a subset of components, portions of the connectivity data are automatically selected by beginning with an initial component and then identifying another component connected to the initial component based upon the connectivity data, adding the other component to the subset of components and then repeating this process until the connectivity data associated with the desired subset of components has been defined, as now set forth by amended independent Claim 1. Indeed, the Dessureault '476 patent has no discussion regarding the automatic selection of portions of the connectivity data to satisfy a request to generate a subset of components as in amended independent Claim 1. Moreover, the Dessureault '476 patent does not, in any context, teach or suggest the identification of another component connected to an initial component based upon the connectivity data, adding the other component to a subset of components and repeating these steps to generate a subset of components, as set forth by amended independent Claim 1.

The Official Action initially cites Figures 8 and 10 of the Dessureault '476 patent in conjunction with the further definition of the automatic selection of portions of the connectivity data that was previously set forth by dependent Claim 56 and is now being added to amended independent Claim 1. However, Figures 8 and 10 and the corresponding text of the Dessureault '476 patent discuss the initial design of a building in which components are selected, such as based upon the two-stage criteria depicted in Figure 8 with the components initially being required to satisfy connection criteria and then being required to further satisfy an engineering subsystem criteria, prior to being connected to other components within the subsystem. Since the components are not connected until the conclusion of the process described by Figures 8 and 10, it follows that the Dessureault '476 patent cannot automatically select portions of the connectivity data by identifying another component connected to an initial component, adding

the other component to the subset of components and then repeating those steps as set forth by amended independent Claim 1, since the connectivity data must first be created by the process depicted in Figures 8 and 10 of the Dessureault '476 patent and does not previously exist so as to be analyzed in the manner now set forth by amended independent Claim 1.

The Official Action also quotes column 2, lines 25-27 of the Dessureault '476 patent which states "such connection capabilities may also be further enhanced with connection rules that only allow valid subsystem connections." Again, this portion of the Dessureault '476 patent is discussing the connection rules that may govern which components may connect to which other components during the initial design of a building. As shown in Figure 8, for example, reference to a two-inch welded pipe is made which necessarily defines the size and type of pipes that can be interconnected thereto. The Official Action also cites a number of other portions of the Dessureault '476 patent in support of its contention that the Dessureault '476 patent describes the further definition of the manner in which portions of the connectivity data are automatically selected in order to satisfy the request to generate a subset of components as previously set forth by dependent Claim 56 and as now set forth by amended independent Claim 1. However, each of these sections again discusses the connectivity parameters that may be considered when interconnecting various components during the original design of a building and in no way teaches or suggests the automatic analysis of existing connectivity data in order to generate a subset of components in the manner now set forth by amended independent Claim 1. For example, column 5, lines 48-65 of the Dessureault '476 patent discusses rules of compatibility to ensure that parts are properly matched. As a further example, column 8, line 64 – column 9, line 12 of the Dessureault '476 patent discusses a connection and, more particularly, connection criteria including physical style, profile and conceptual style that may be taken into account to ensure that two adjacent components can connect to one another, such as being of the same size, having the same profile and being designed to carry the same fluid, for example. However, each of these connection criteria is taken into account during the original design of the building.

In contrast, amended independent Claim 1 utilizes pre-existing connectivity data to satisfy the request to generate a subset of components by beginning with an initial component

and then identifying another component connected thereto based upon the connectivity data, adding the other component to the subset of the components and then repeating the steps in order to generate the subset of components. Like *Baum et al.* and *Boose et al.*, the Dessureault '476 patent also fails to teach or suggest the further definition of the manner in which portions of the connectivity data are automatically selected, as now set forth by amended independent Claim 1.

Since none of the cited references teach or suggest at least the further definition of the automatic selection of portions of the connectivity data in the manner now set forth by amended independent Claim 1, it is submitted that any combination of the cited references would also necessarily fail to teach or suggest at least these recitations of amended independent Claim 1. Independent Claims 20 and 38 have been amended to include similar recitations to those of amended independent Claim 1. Accordingly, amended independent Claims 20 and 38 are also patentably distinct from the cited references, taken either individually or in combination, for at least the same reasons described above in conjunction with amended independent Claim 1. As such, the rejection of independent Claims 1, 20 and 38, as amended, is therefore respectfully submitted to have been overcome.

Since the dependent claims depend from and therefore include the recitations of a respective independent claim, the rejections of the dependent claims are also overcome for at least the same reasons described above in conjunction with the respective independent claims. However, a number of the dependent claims include additional recitations that further patentably distinguish the claimed invention from the cited references, taken either individually or in combination.

Dependent Claims 12, 29 and 46 recite that the request for subset of components requests that the subset of components include a path that is located at a predefined distance away from a respective component. The Official Action contends that *Baum et al.* reads upon dependent Claims 12, 29 and 46 as a result of the distance between components depicted in Figure 5. Further, page 7 of the Official Action notes that since Figure 5 of *Baum et al.* depicts distances between components, *Baum et al.* need not have a discussion of those distances. While Figure 5 does depict various components spaced from one another by various distances, neither *Baum et*

al. nor *Boose et al.* teaches or suggests (in either the figures or the text) that a request for the display of a subset of components requests that the subset of components includes a path located a predefined distance away from a respective component as set forth by dependent Claims 12, 29 and 46. Indeed, while *Baum et al.* depicts components separated by various distances, there is no teaching or suggestion of a request for a subset of components that includes a path located a predefined distance away from a respective component, as per dependent Claims 12, 29 and 46. In fact, in *Baum et al.*, there is no teaching or suggestion as to a request defining a predefined distance or referencing a respective component from which a path is to be spaced, as per dependent Claims 12, 29 and 46.

In addition, dependent Claims 16-19, 34-37 and 51-54 are directed to a request for the subset of components to be those included in either a repair log or a maintenance procedure. The Official Action notes on pages 8 and 9 “that on page 294 of *Baum et al.* in the third paragraph is recited, ‘A path through the diagram will ultimately lead to a *fault code* which should be entered in the flight logbook.’ The ‘flight logbook’ is related to the repair log and therefore any fault would lead from the flight logbook to the repair log. This series of events would happen because the maintenance personnel would reference the flight log in order to know what repairs were required to get the plane air worthy for the next flight. Applicants' are attempting to claim a methodology regarding the standard practices in air operations, the Examiner respectfully sets forth that this methodology would be known to an artisan of ordinary skill.” Thus, *Baum et al.* describes the use of the path tracing to generate a fault code that will be appropriately recorded in a flight logbook. In contrast to *Baum et al.* that utilizes a displayed path to generate a fault code that, in turn, is recorded, dependent Claims 16-19, 34-37 and 51-54 proceed in the opposite direction by beginning with either a repair log or a maintenance procedure and then utilizing the information from the repair log or the maintenance procedure to define the request that is made for the generation of a subset of components including those in a repair log or maintenance procedure. as recited by dependent Claims 16, 17, 34, 35, 51 and 52.

For each of the foregoing reasons, at least the dependent claims identified above include additional recitations that are also not taught or suggested by the cited references, taken either

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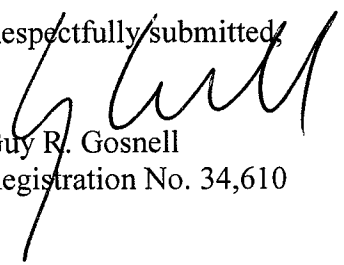
individually or in combination, and, as such, are further patentably distinct from the cited references.

CONCLUSIONS

In view of the amendments to the claims and the foregoing remarks, it is respectfully submitted that all of the claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,


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